Naval Facilities Engineering Service Center -

Software Developments

...Providing Support to the Marine, Sailor

and Seabee!!

Jan/Feb 2000

Mission

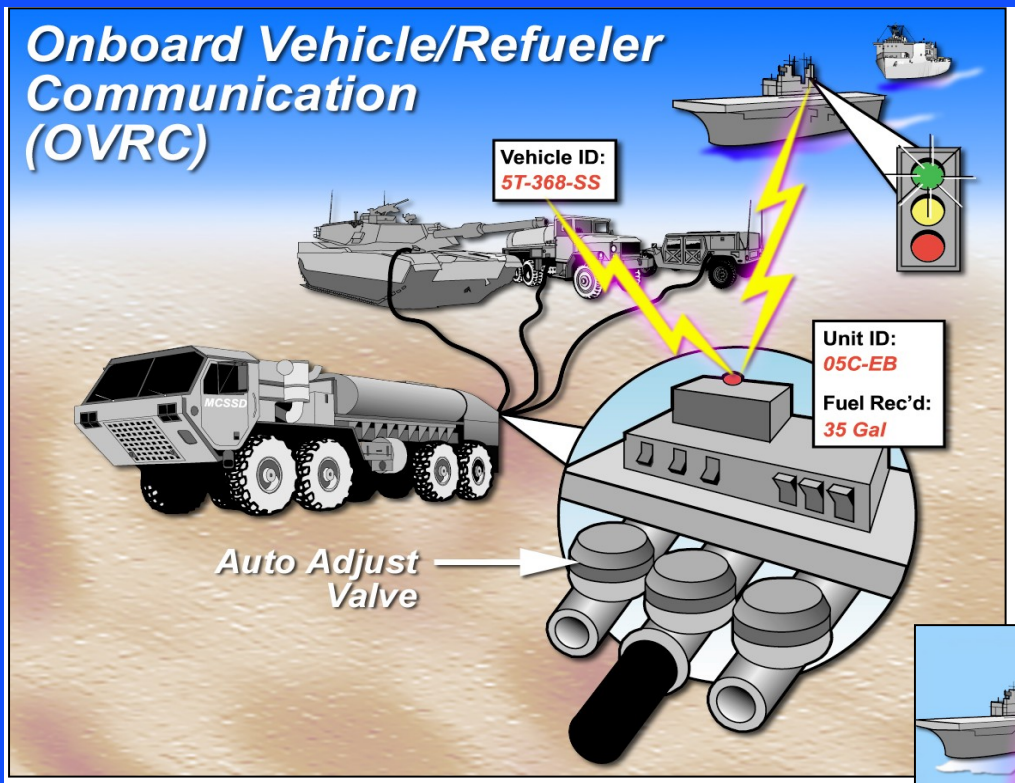
The Naval Facilities Engineering Service Center in addition to other activities conducts RDT&E, provides program and project leadership, planning and management, and provides expert consulting services in support of the Naval Expeditionary Force.

Specific areas of interest supported include:

- **JLOTS Technology Improvements**
- **Operational Maneuver From the Sea**
- **Expeditionary Warfare Support**

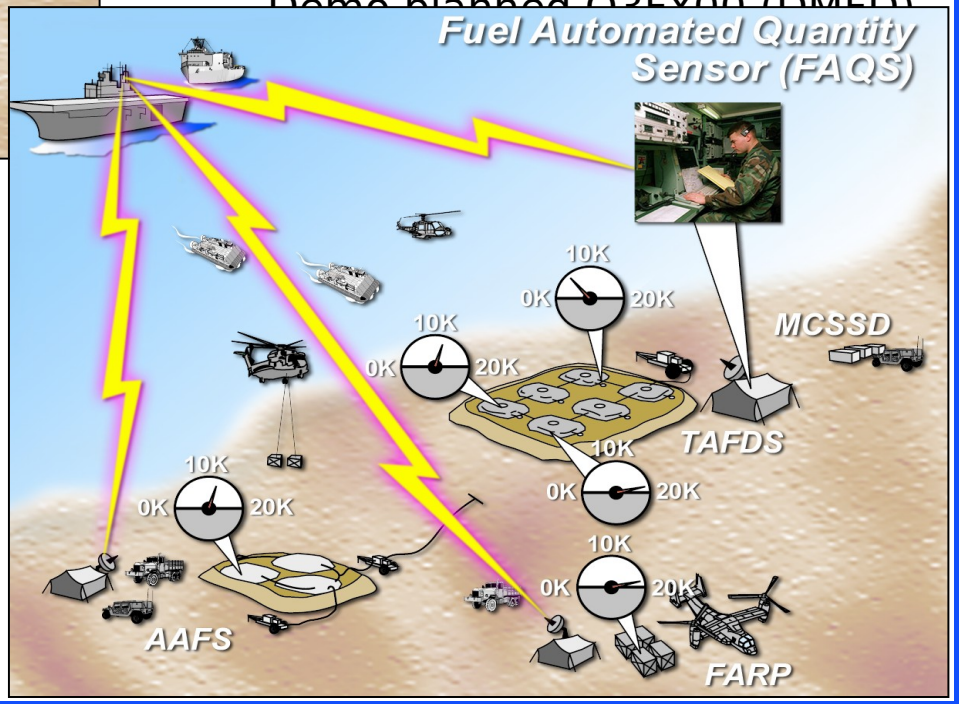
JLOTS Technology Improvements

USMC 6.3 Fuel Initiatives



OVRC

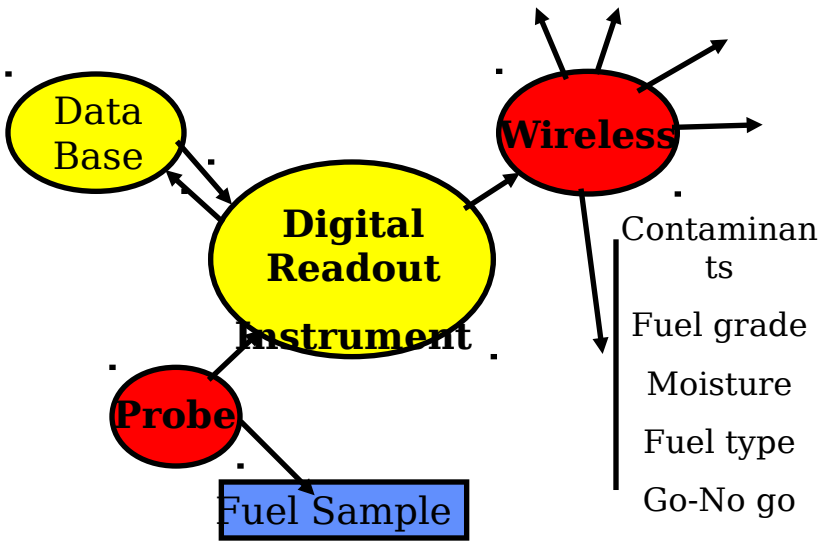
- Purpose
  - Collect/ transmit vehicle diagnostics sensor(s) output
- Status
  - Contract awarded to SwRI
  - TAV compatible tags and data links
  - Demo planned Q3FY00 (DMED)



FAQS

- Purpose
  - Provide local (e.g., tank farm) and global (battlefield) picture of fuel supply
- Status
  - Contract awarded to SwRI
  - Linked to TAV and SUL
  - Demo planned Q3FY00 (provide SUL real input)

Handheld Remote Fuel Quality Sensor



OBJECTIVES:

- Marine Corps handheld wireless field test instrument
- Automated functions that allow untrained Marines to assess fuel quality
- Versatility - various fuel grades and types

CAPABILITIES:

- Solid state with built in fuel data base
- Wireless
- Fuel grade determination capability
- Fuel type determination capability
- Fuel contamination assessment
- Fuel go-no go determination

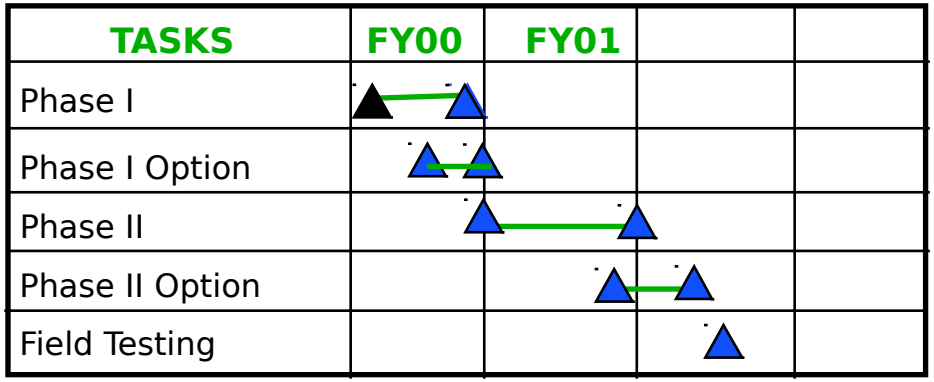
TECHNICAL APPROACH:

- SBIR Phased
- Proof of concept technology demonstrated with Phase I Option deliverable
- Gather USMC fuel contaminants criteria for input into Phase II hardware development
- Phase II hardware Demonstration
- Phase II Option Pre-Production build
- First Article Tests

PERFORMERS:

- Advanced Fuel Research Inc, NFESC, Army, EPA

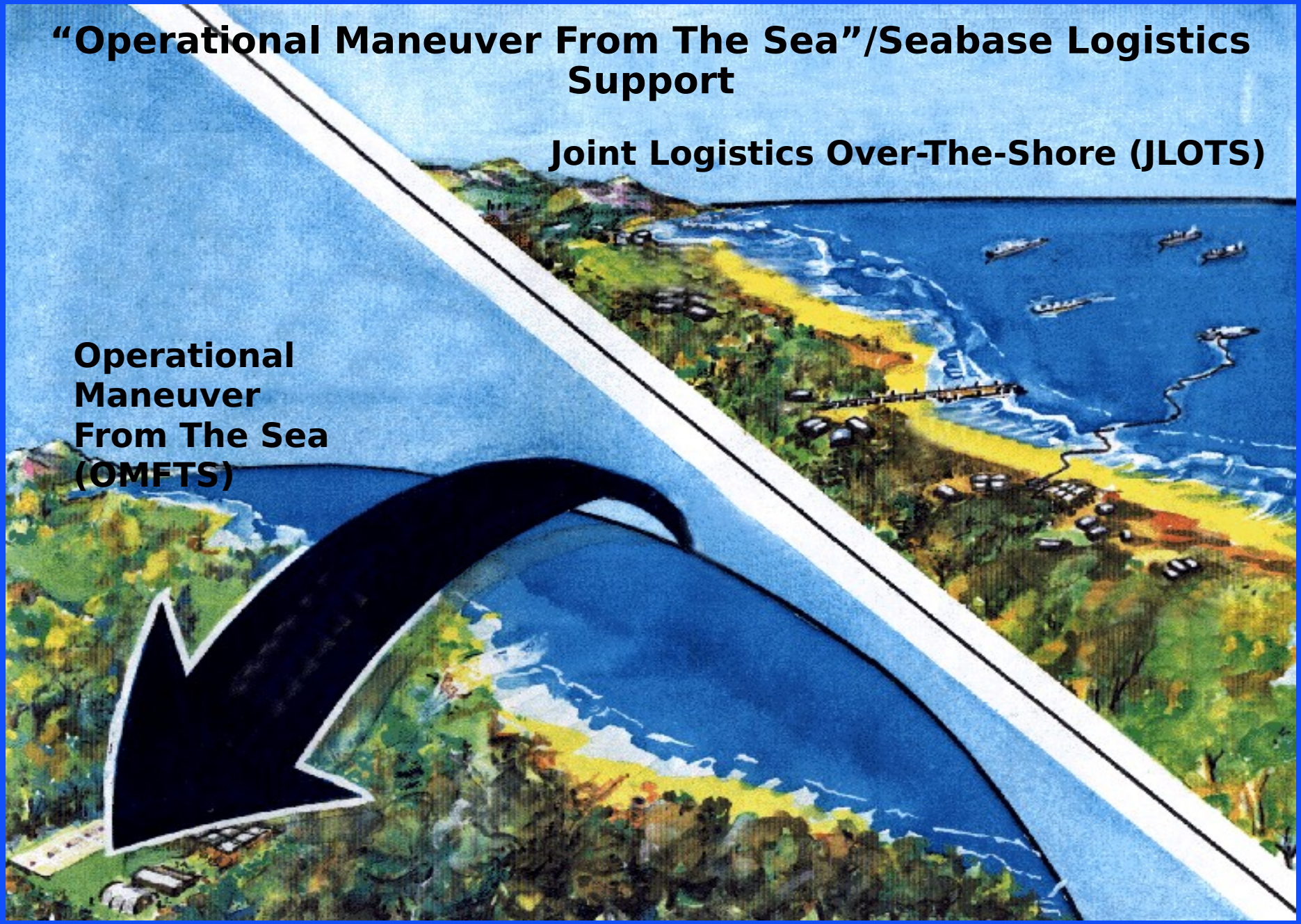
SCHEDULE:

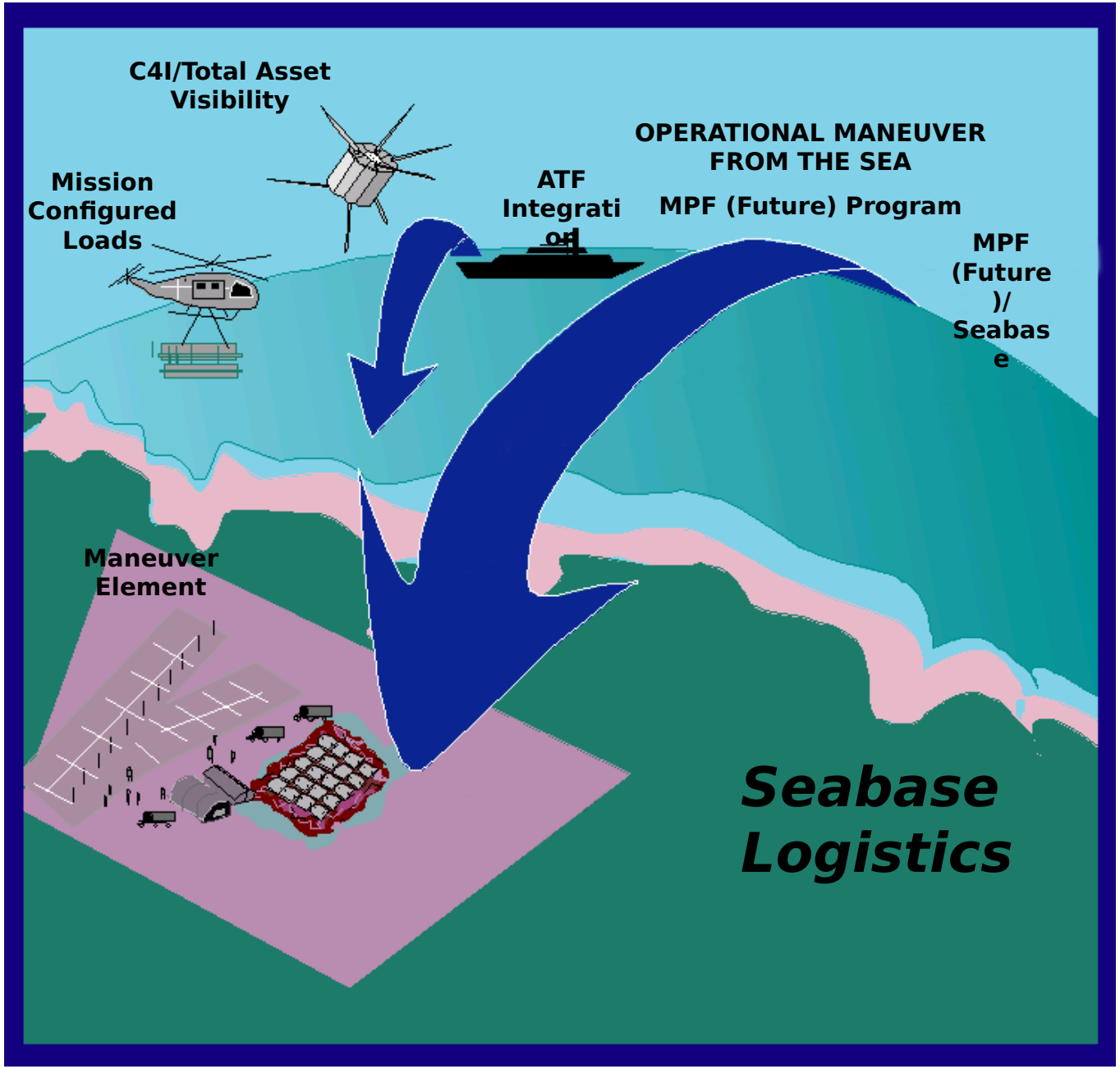


TRANSITION:

- PM CSLE

“Operational Maneuver From The Sea”/Seabase Logistics Support

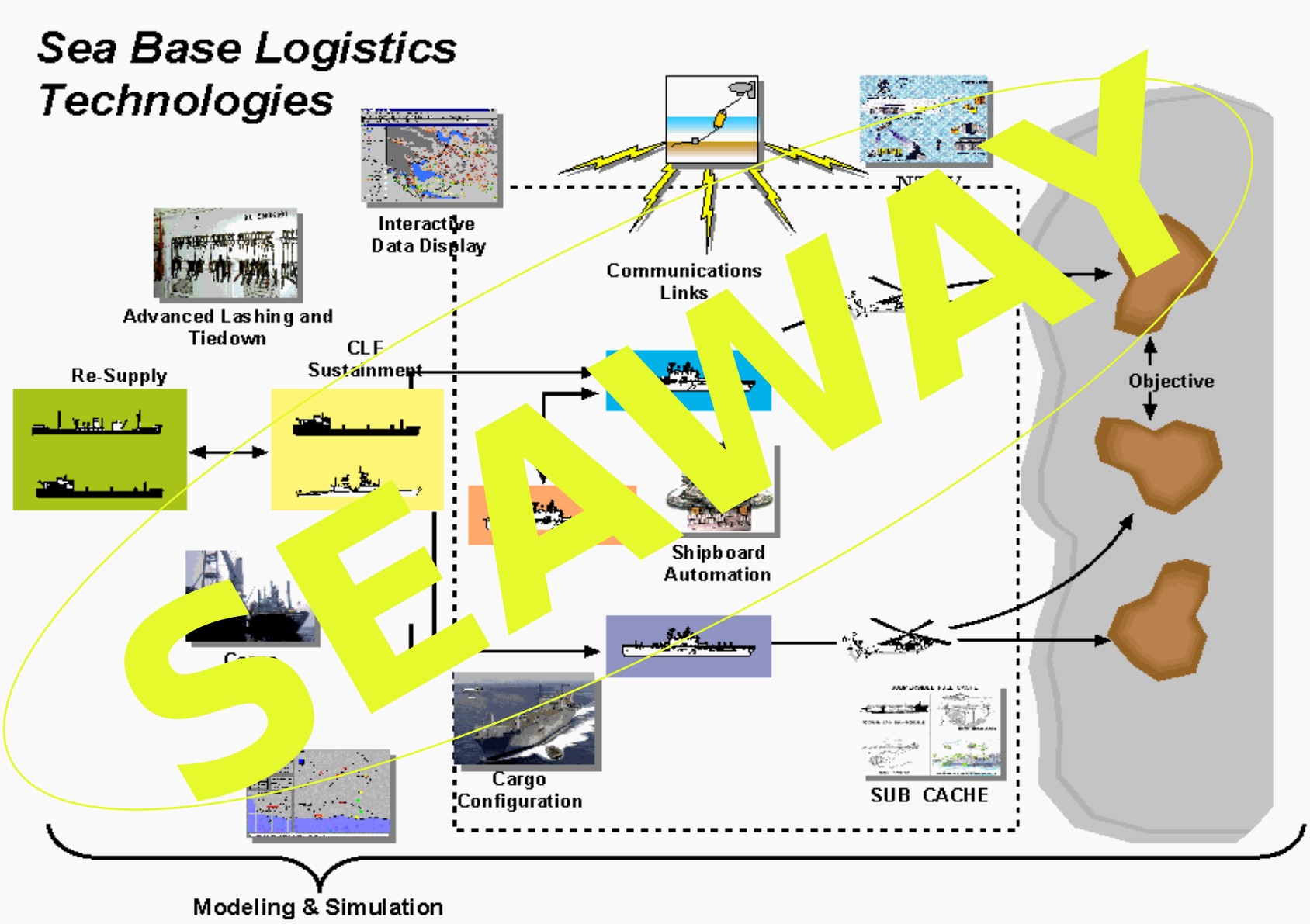



C4I/Total Asset Visibility
Mission Configured Loads
ATF Integrati on
OPERATIONAL MANEUVER FROM THE SEA
MPF (Future) Program
MPF (Future)/ Seabas e
Maneuver Element
Seabase Logistics

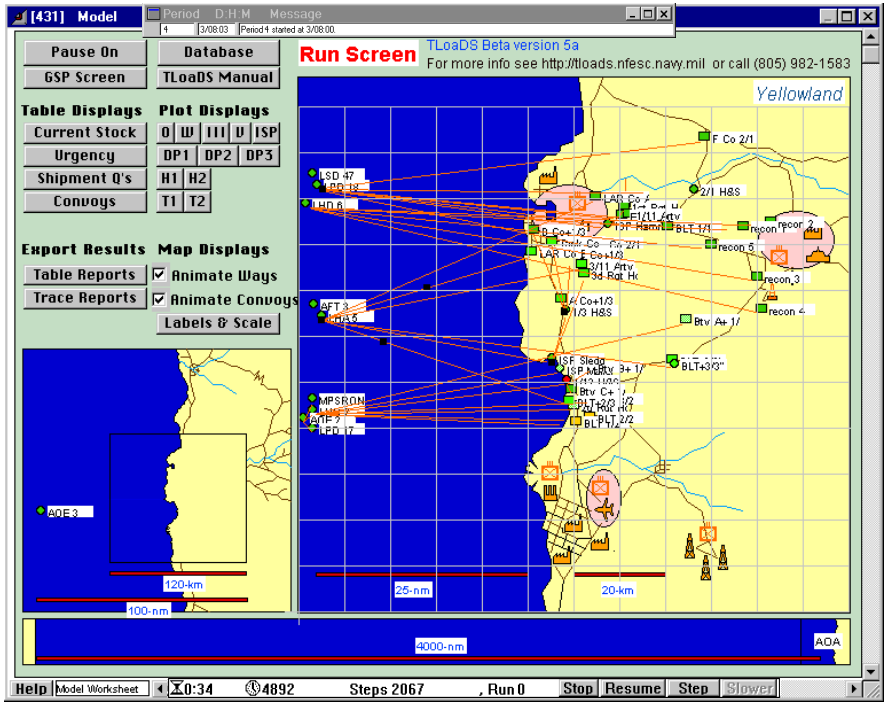
Sea Base Logistics

- **Objective**
  - **Develop critical Sea Base logistics technologies to enable the Navy/Marine Corps Team to perform Operational Maneuver from the Sea.**
- **Payoffs**
  - **Capability to manage large scale Sea Base logisitics**
  - **Capability for selective offload of Sea Base ship(s)**
  - **Capability to resupply Sea Base in SS 3**
  - **Capability to reconfigure for new missions**
- **Technology Areas**
  - **Configuration (e.g., in-transit container mover, equipment washdown)**
  - **Cargo transfer (e.g., batch liquids supply and distribution)**
  - **Warehousing & Distribution (e.g., warehouse automation)**
  - **Information Technology (e.g., SEAWAY, CLoaDS, OTH communications link)**

Sea Base Logistics Technologies



TLoaDS & C-LoaDS



- **Features**
  - Stochastic discrete event
  - Queuing, chaotic dynamics
  - Very flexible, setup wizards
  - Animated, tabular & trace output
  - Integral database, fast run speed
  - Low cost PC COTS software

- **Force planning - analytical M&S**
  - Doctrine, concepts & TTP
  - Force structure & task organization
  - Impacts of training & education
  - Equipment design & quantities
  - ***HLA distributed simulation***
- **Operation planning - Log C2 InfoSys**
  - Tactical & operational planning
  - Conceptual & functional planning
  - Orientation, contingency & ***commitment*** planning
  - Deliberate & ***rapid*** planning
  - ***Collaborative planning***

Key: Current capabilities
Planned capabilities

More Screens

Commodity Planning Tools

6.2 Maint Deploy

6.2 Engr Survey

6.2 Sup

Asset Tracking

6.2 NTAV

6.3 NAV

SPAWARSYSCEN

(VIDW)

Log Databases

(SNADP)

Web Tech

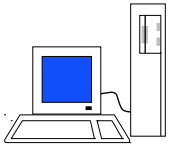
CSS Tech Integ

Log Info Systems

Legacy Systems

JMSIS

TC-AIMS II



GTN

Others

6.3 CSSOC AT

(FSSG)

(FSSG Forward)

(CSSD/MSSG)

CSSD

CSSOC

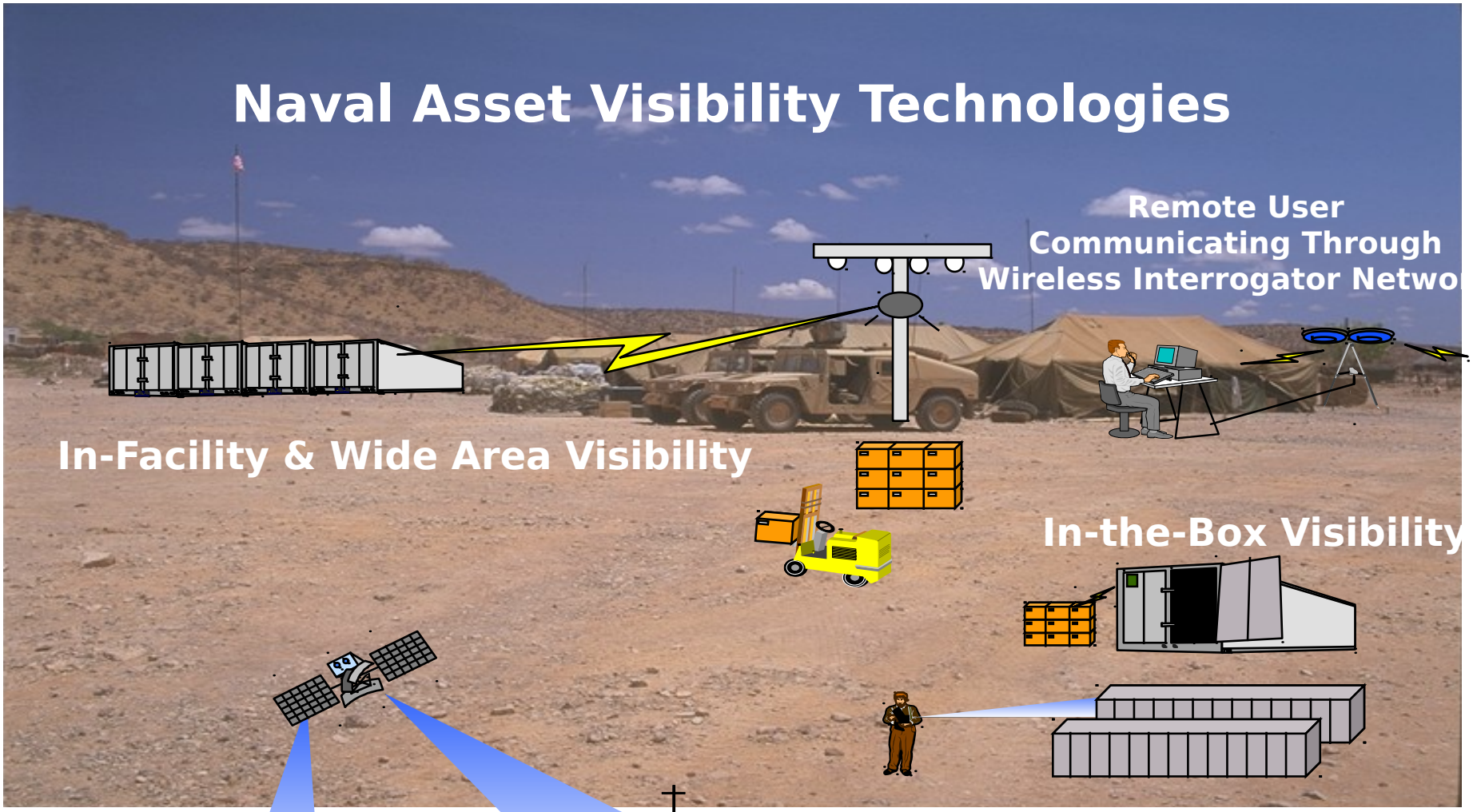
CSSOC Main

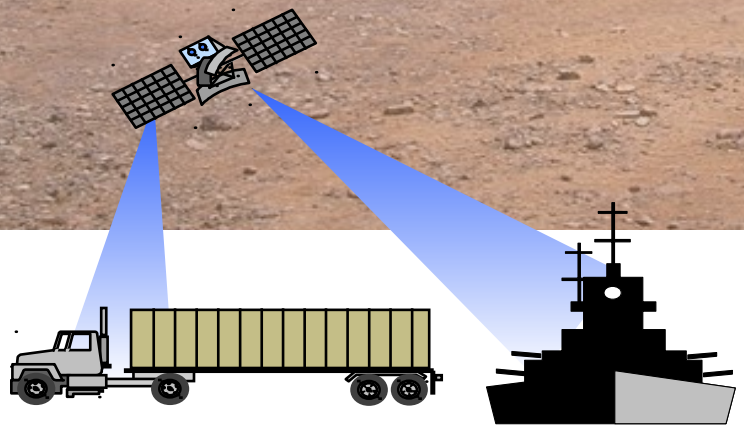
CSSOC Medium

CSSOC Light

COMMON SYSTEM ARCHITECTURE

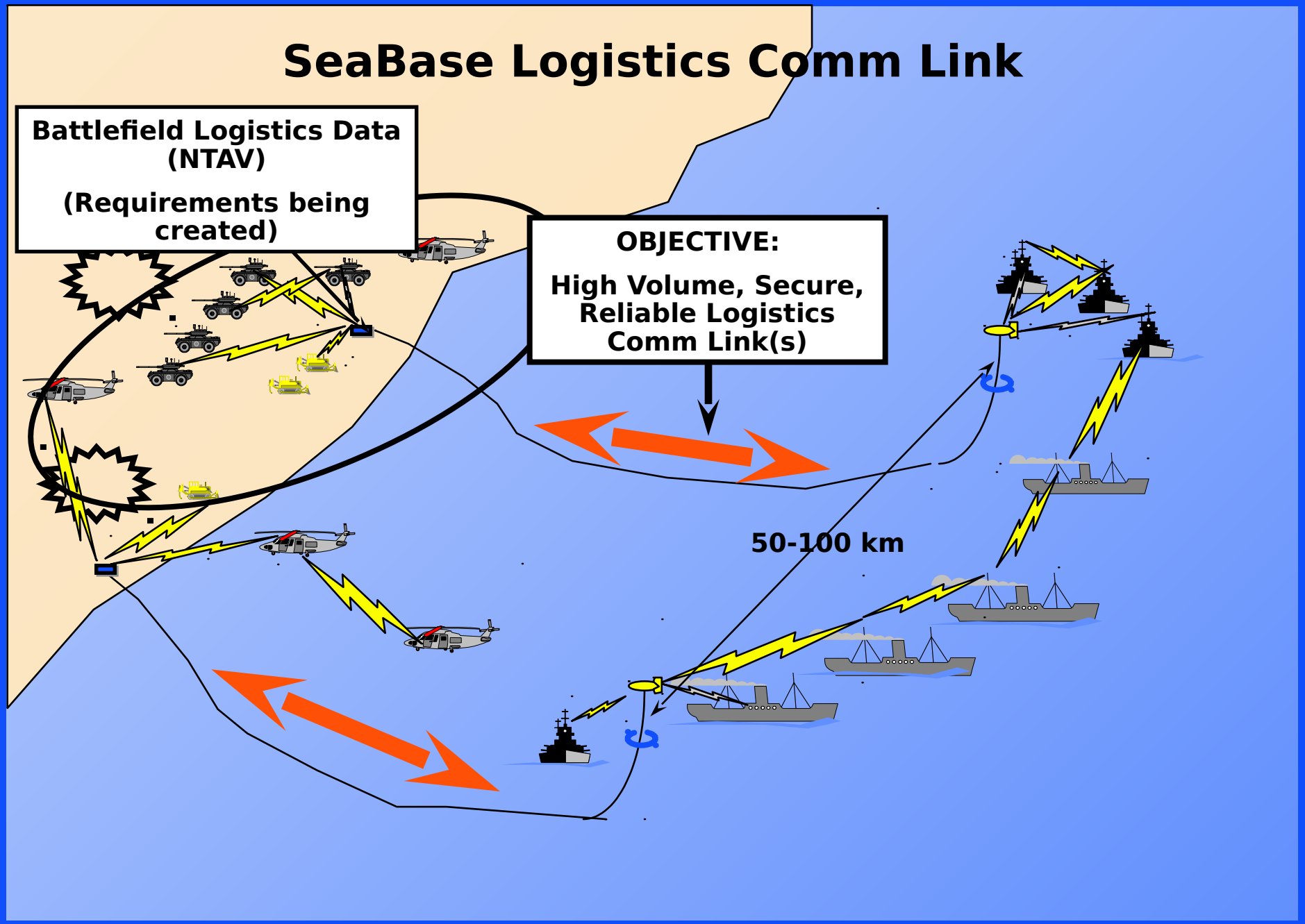
Naval Asset Visibility Technologies





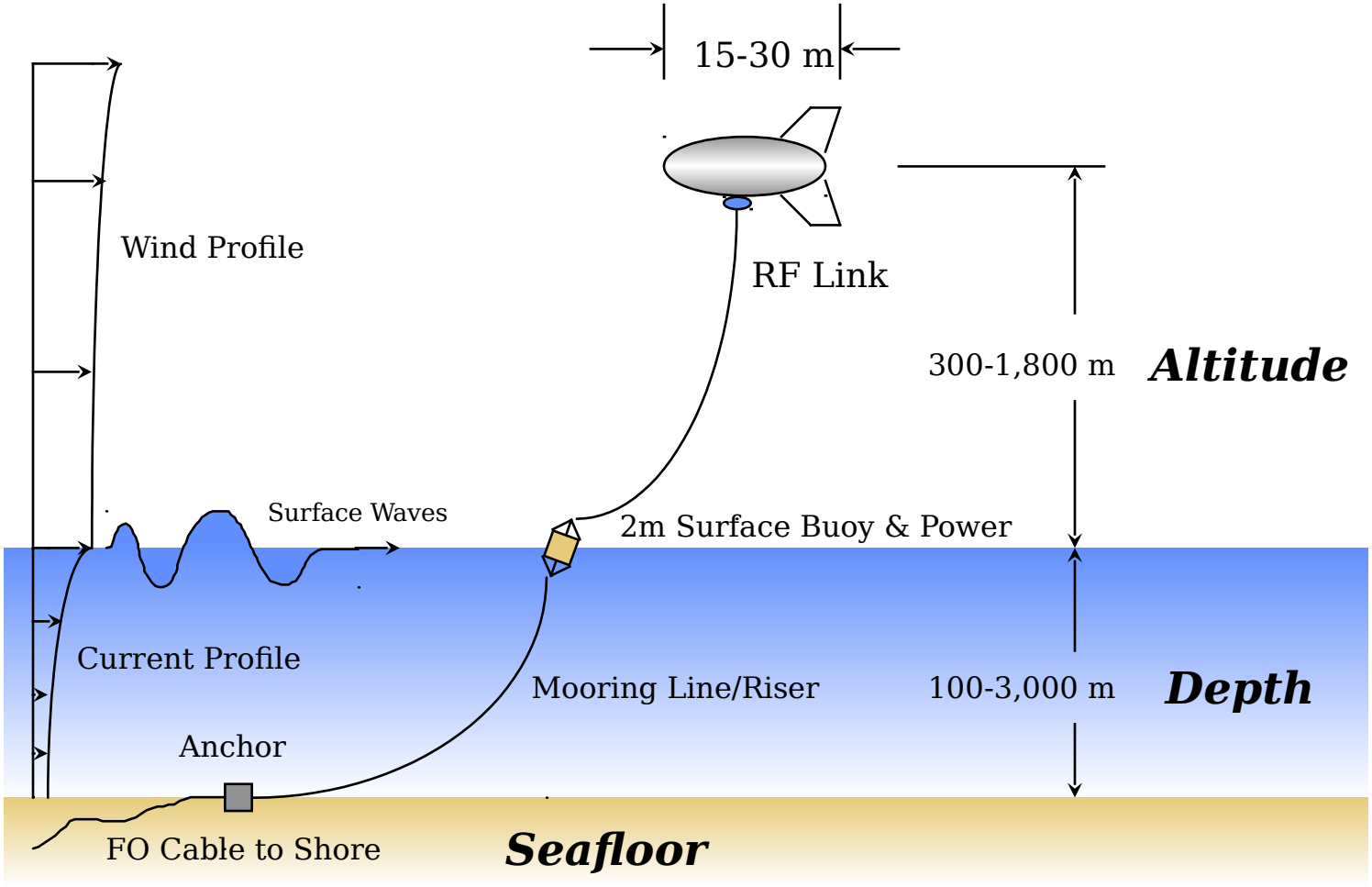
In-Transit Visibility

SeaBase Logistics Comm Link



TCOM Aerostat used for Drug Interdiction

Design Considerations for a Moored AeroBuoy……



Expeditionary Warfare Support

Small Unit Logistics (SUL) ACTD

Objective

- Improve tactical/small unit logistics C2
- Improve CSS effectiveness through course of action and execution tools

Capabilities

- Common tactical logistics picture
- COA analysis
- Leveraged logistics data
- Resource optimization

Technical Approach

- Apply web-based/ internet/ data interface to legacy information systems
- Apply Data Warehousing / Mart / Mining
- Utilize common tactical picture

Performers

- PACOM, MCSC, CASCOM, DARPA, NFESC

Schedule

TASKS	FY98	FY99	FY00	FY01
ACTD COORDINATION				
C2 ARCHITECTURE				
LOGISTICS ARCHITECTURE				
DECISION SUPPORT TECH				
JOINT DEMONSTRATION				

Transition

- PM IS


"We have slain the mighty dragon, but now we're left with numerous pesky snakes."
U.S.S.R.
HAITI
IRAQ
CUBA
BOSNIA
N.KOREA
CHECHNYA
SOMALIA